

REMARKS

Claims 1-37 are pending in this application. Claims 1, 3-6, 10-13 and 15-25 have been amended. Claims 26-37 remain withdrawn from consideration by the Examiner as being directed to a non-elected invention. Reconsideration of this application, as amended, is respectfully requested.

Improper final Rejection

At the outset, it is noted that the Examiner has rejected claims 8 and 11 in view of the prior art. In the Office Action dated April 30, 2008, the Examiner did not reject these claims in view of the prior art, but only rejected these claims under 35 U.S.C. § 112, second paragraph. The Examiner asserts that the present Office Action has been made final due to the amendments presented in the last reply. However, claim 8 was only amended to delete the term “slowly” and claim 11 was only amended to change “kept at a minimum” to “reduced.” These amendments did not change the scope of the claim to require the Examiner to now provide a rejection in view of the prior art due to the amendments. This is especially true with regard to claim 11, because “kept at a minimum” and “reduced” are almost the same scope and the Examiner has now rejected this claim in view of the same prior art relied on by the Examiner in the last Office Action.

In any event, Applicants submit that the Examiner should have rejected claims 8 and 11 in the last Office Action, if the Examiner believed that the prior art read on these claims. By rejecting claims 8 and 11 in the present Office Action in view of the prior art, Applicants have not had an opportunity previously to address the Examiner’s prior art rejections with regard to these claims. Therefore, the finality of the last Office Action should be withdrawn and the present amendments should be entered.

To the extent the Examiner does not agree that the finality of the last Office Action should be withdrawn, Applicants reserve the right to petition the finality of the present Office Action.

Election/Restriction

Claims 26-37 remain withdrawn from consideration as being directed to a non-elected invention. In the Examiner's Office Action, the Examiner asserts that claims 1 and 26 lack the same or corresponding special technical feature. When claim 1 is otherwise in condition for allowance, claim 26 will be amended to include the same or corresponding special technical feature.

Rejection Under 35 U.S.C. § 112, second paragraph

Claim 11 stands rejected under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. This rejection is respectfully traversed.

As the Examiner will note, claim 11 has been amended to address the Examiner's rejection by changing the recitation "is reduced" to "is reduced to a preset degree" in a similar manner to claim 5.

In view of the above amendments and remarks, Applicants respectfully submit that claim 11 is definite and clear. Reconsideration and withdrawal of the Examiner's rejection under 35 U.S.C. § 112, second paragraph, are therefore respectfully requested.

Rejections Under 35 U.S.C. §§ 102 and 103

Claims 1, 2, 4-7, 9, 10, 12 and 19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by La et al., U.S. Patent No. 5,320,250. Claims 3, 8, 11, 13, 14, 20 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over La et al. Claim 22 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over La et al. in view of Berg et al., U.S. Patent No. 6,450,416. Claims 23-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over La et al. in view of LaBudde et al., U.S. Patent No. 6,589,791. Claims 1-7, 9, 10, 12-14 and 19-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over La et al. in view of Py,

U.S. Patent No. RE37047. Claims 15-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over La et al. in view of Py and Tzeng et al., U.S. Patent No. 5,988,526. Claim 22 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over La et al. in view of Py and Berg et al. Claim 23-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over La et al. in view of Py and LaBudde et al. These rejections are respectfully traversed.

The present invention is directed to a method of jetting droplets of viscous medium onto a substrate. Independent claim 1 recites a combination of steps including “feeding said viscous medium into the nozzle space ... wherein the step of feeding comprises: prior to each step of impacting to jet each individual droplet, filling the nozzle space with said viscous medium to a varying degree, the degree being adjusted in dependence on the volume of the droplet to be jetted after each step of impacting.” Applicants respectfully submit that La et al. fails to teach or suggest the present invention as recited in independent claim 1.

In La et al., the amount of viscous medium ejected is dependent on the depth of the hammer impact (see column 5, lines 36-42) and the depth of the hammer impact is, in the embodiment shown in Figures 1-5, controlled by varying the position of a stop screw 64. In view of this, the La et al. reference does not vary the degree of filling prior to each step of impacting. It is necessary to stop the machine and adjust the screw to change the volume of a particular droplet. A similar arrangement is shown for the embodiment shown in Figures 6-10, where the impact of the hammer 104 is controlled by a stroke adjustment micrometer screw assembly 124. In view of this, the amount of viscous medium fed into the nozzle space for an upcoming impact depends on how much viscous medium was ejected in a previous step. In other words, the volume of viscous medium in the nozzle space remains the same for each upcoming impact. There is no adjustment performed for each impact as in the presently claimed invention.

In the present invention; however, the amount of viscous medium to be ejected is dependent on the amount of viscous medium fed into the nozzle space. In other words, according to the present invention, the filling degree of the nozzle space is varied to adjust the volume of viscous medium in the nozzle space and thereby control the specific volume of each individual

droplet that is ejected. This can be clearly understood from a review of Figures 6a-6c of the present application, where the volume of viscous medium in the nozzle space is controlled in order to adjust the specific volume of each individual droplet.

In the Examiner's Office Action, the Examiner states the following:'

The desired specific volume of the droplet is dependent on the volume of viscous material previously fed into the chamber. At the very least, enough material must be added to the nozzle space so that there is at least the desired specific volume of the viscous material present in the nozzle space in order to be ejected as the drop (claim 1).

Since claim 1 has been amended to specifically recite filling of the nozzle space to a varying degree, which degree is adjusted in dependence on the volume of the droplet to be jetted, Applicants submit that La et al. fails to anticipate the presently claimed invention. La et al. in no way discloses the specific step of "filling" the nozzle space to a varying degree prior to each step of impacting. In La et al. the amount of filling is the same prior to each impacting step. It is necessary to shut off the machine and adjust the hammer impact to change the volume of a droplet.

With regard to dependent claims 2-25, Applicants respectfully submit that these claims are allowable due to their dependence on independent claim 1, as well as due to the additional recitations in these claims.

In view of the above amendments and remarks, Applicants respectfully submit that claims 1--25 clearly define the present invention over the references relied on by the Examiner. Reconsideration and withdrawal of the Examiner's rejections under 35 U.S.C. §§ 102 and 103 are respectfully requested.

CONCLUSION

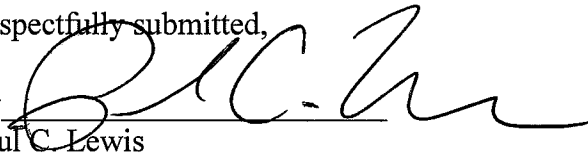
Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Paul C. Lewis (Reg. No. 43,368) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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